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ORIGINAL RESEARCH

Perfectionism and Burnout in Junior Soccer Players: A Test of the 2 x 2 Model of Dispositional Perfectionism

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Research examining the perfectionism-burnout relationship has typically focused on the main effects of single dimensions of perfectionism. The purpose of the current study was to extend this research by examining the interactive effects of dimensions of perfectionism in predicting symptoms of athlete burnout. In doing so, the hypotheses of the recently developed 2 × 2 model of dispositional perfectionism were tested in regards to differences between subtypes of perfectionism. One hundred sixty-seven junior male soccer players were recruited from English professional soccer clubs and completed paper-and-pencil measures of perfectionism and symptoms of athlete burnout. Moderated hierarchical regression provided support for the hypotheses of the 2 × 2 model for some but not all symptoms of burnout. Overall, the findings suggest that the 2 × 2 model may offer a useful framework through which to explain the interactive effects of dimensions of perfectionism on athlete burnout.

Keywords: coaching, motivation, physical performance, psychology, sport, sport psychology

Professional soccer clubs in England invest substantial amounts of money in the development of young players. An estimated £66 million was spent on player development by English professional football clubs at youth level (8–18 years of age) during 2005–2006 (Lewis, 2007). Competition among clubs to recruit the best prospects is fierce. The pursuit of junior players by professional clubs is regularly highlighted in the media, with reports of teenagers being traded for large sums of money not uncommon (e.g., Hytner, 2011; Nixon, 2012; Wallace, 2012). However, as is typical, very few of those who show early promise achieve elite status. Of the estimated 10,000 boys involved in the youth soccer development system, fewer the 1% are thought to become professional footballers (Green, 2009). With these features in mind, it is easy to see why this environment has been described as all consuming, physically demanding, and extremely competitive (Roderick, 2006). Those responsible for junior athletes in this setting, therefore, face a difficult task in safeguarding the welfare of aspiring junior soccer players.

Even though participation in youth sport can be a rewarding experience, the implications of excessive physical and psychological demands it can pose have also been highlighted by a number of researchers (see Gould & Dieffenbach, 2003). Adolescence is an especially significant period of self-development for junior athletes during which their understanding of personal roles, relationships, and activities inside and outside of sport begins to take shape (Evans, 1994). Intense involvement in competitive youth sport will play a prominent role in this process and, under extreme circumstances, may even subvert healthy identity formation. Coakley (1992) has argued, for instance, that rather than developing a multifaceted sense of self, some junior athletes may develop a sense of self that relates exclusively to their sport participation. When this is the case, junior athletes are thought to be especially susceptible to the effects of stressful events in the sport domain and may engage in dysfunctional achievement striving that renders them vulnerable to the undesirable consequences of competitive youth sport, such as burnout.

Athlete burnout is an experiential syndrome that includes three core symptoms (Raedeke & Smith, 2001). The first symptom is a sense of reduced accomplishment in terms of sport skills and abilities. The second symptom is emotional and physical exhaustion associated with practice and competition. The third symptom is a devaluation of participation and performance in sport. Burnout is distinct from other salient outcomes of sport participation such as dropout and overtraining (Cresswell & Eklund, 2006). Unlike dropout, burnout is thought to entail a more rigid commitment to sport and does not necessarily lead to discontinuation of participation. In addition, unlike overtraining, burnout includes a stronger psychological component, with excessive training and insufficient recovery (viz., overtraining) being a potential contributory factor but not prerequisite of burnout (Cresswell & Eklund, 2006). In comparison with these other more common outcomes, burnout is also considered to have a

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more profound impact on motivation, performance, and well-being (Cresswell & Eklund, 2006).

Theorists have offered a number of explanations for the development of burnout, which include stress-based and commitment-based models (Smith, 1986; Schmidt & Stein, 1991). Based on a critical review of these explanations, Cresswell and Eklund (2006) have argued that a psychological needs-based explanation, in the form of self-determination theory (Deci & Ryan, 2002), may be particularly insightful. Self-determination theory has been used to examine a wide range of outcomes in sport, exercise, and health settings (see Ryan & Deci, 2007, for a review). One of the main tenets of the theory is that the fulfillment of psychological needs for autonomy (i.e., volition, choice, and self-directedness), competence (i.e., perceptions of effectiveness), and relatedness (i.e., a sense of belonging or connection to others) provide the basis for positive psychological outcomes, more internalized or autonomous motivation, and well-being (Deci & Ryan, 2002). Conversely, the thwarting of these needs is thought to lead to negative psychological outcomes, less internalized or controlled motivation, and ill-being. From this perspective, burnout is a state of ill-being that develops as a consequence of a deficit in need fulfillment and coincides with a progressive deterioration in motivation (Cresswell & Eklund, 2005).

According to Cresswell and Eklund (2006), this approach has a number of advantages in comparison with rival explanations. In particular, self-determination theory subsumes other models to provide a more coherent explanation of athlete burnout. For example, the thwarting of basic psychological needs has the potential to contribute to the chronic stress identified by Smith (1986) as a critical antecedent of athlete burnout. Similarly, the thwarting of psychological needs, especially autonomy, may explain the entrapment suggested by Schmidt and Stein (1991) to characterize the commitment exhibited by burnouts. Recent research adopting self-determination theory to explain athlete burnout has also provided consistent empirical support for this approach. This has confirmed both the expected converse associations between need satisfaction and need thwarting with athlete burnout (e.g., Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Hodge, Lonsdale, & Ng, 2008; Perreault, Gaudreau, Lapointe, & Lacroix, 2007) and the pattern of less internalized and more controlled motivation that describes the syndrome (e.g., Cresswell & Eklund, 2005; Lonsdale, Hodge, & Rose, 2009). Consequently, self-determination theory offers a useful means of identifying antecedents of burnout, drawing special attention to factors that inhibit innate growth tendencies and engender a pattern of motivation indicative of burnout.

One factor that may influence the burnout process described by self-determination theory is perfectionism. Perfectionism is a multidimensional personality trait that includes a constellation of self and other-related beliefs (Campbell & DiPaula, 2002). There are currently a number of approaches to the measurement of perfectionism (see Enns & Cox, 2002, for a review). However, research suggests that there is sufficient conceptual and empirical overlap between common approaches to consider current models to be part of a higher-order model (e.g., Cox, Enns, & Clara, 2002; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993). From this perspective, trait perfectionism includes a range of subdimensions indicative of two broader dimensions. The first broad dimension is personal standards perfectionism (PSP), which entails a personal commitment to exacting standards with elements of stringent self- and other-evaluation (measured using combinations of high personal standards, a need for organization, self-oriented perfectionism, and other-oriented perfectionism subdimensions; Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). The second broad dimension is evaluative concerns perfectionism (ECP), which entails beliefs that others are imposing perfectionistic standards on the self and the tendency to engage in harsh self-evaluation (measured using combinations of concern over mistakes, doubts about actions, pressures from significant others, and socially prescribed perfectionism subdimensions).[1]

Early descriptions of athletes prone to burnout identified perfectionism as a vulnerability factor (e.g., Feigley, 1984; Fender, 1989). Research has tested this assertion by identifying the independent, or main, effects of dimensions of perfectionism on burnout. Studies have typically found that PSP subdimensions are negatively related or unrelated to athlete burnout, whereas ECP subdimensions are positively related to athlete burnout (e.g., Gould, Tuffey, Udry, & Loehr, 1996; Hill, Hall, Appleton, & Kozub, 2008; Lemyre, Hall, & Roberts, 2008). This research has advanced understanding of the perfectionism-burnout relationship by comparing the contribution of subdimensions of perfectionism to symptoms of burnout, as well as identifying some of the divergent psychological processes that explain their relationships (e.g., Hill, Hall, & Appleton, 2010; Hill et al., 2008). However, as recently argued by Gotwals (2011), this approach may offer limited insight into perfectionism as a multidimensional trait because it ignores the potential interplay between dimensions in determining their effects. Consequently, to test the assertions of early theorists fully, research is required that focuses on the interactive rather than independent effects of perfectionism dimensions.

The recently proposed 2 × 2 model of dispositional perfectionism may offer a useful theoretical framework to examine the interplay between perfectionism dimensions (Gaudreau, 2012; Gaudreau & Thompson, 2010; Gaudreau & Verner-Filion, 2012). As described by Gaudreau and colleagues, the model is based upon a number of theoretical and empirical developments in the area. In particular, the model emphasizes the multidimensional nature of perfectionism and the notion that the two core broad dimensions (personal standards perfectionism and evaluative concerns perfectionism) coexist to varying degrees within each individual. In addition, the various combinations of the two core dimensions are suggested

to correspond with divergent etiological and motivational processes that explain their effects. Importantly, because the within-person organization of perfectionism dimensions is the unit of analysis, the model offers a means of moving beyond the examination of main effects and instead focuses on the interactive effects of dimensions of perfectionism.

The within-person organizations of perfectionism take the form of four combinations of perfectionism or subtypes (Gaudreau, 2012; Gaudreau & Thompson, 2010; Gaudreau & Verner-Filion, 2012). The first subtype is labeled nonperfectionism (low PSP/low ECP) and reflects those who neither perceive social pressure nor have a personal orientation toward setting or pursuing perfectionist standards. The second subtype is labeled pure personal standards perfectionism (high PSP/low ECP) and reflects those who are uniquely personally oriented toward setting and pursuing perfectionist standards. The third subtype is labeled pure evaluative concerns perfectionism (low PSP/high ECP) and includes those who pursue perfectionistic standards derived from social pressure without internalizing these standards. As such, this subtype is considered to be a noninternalized or externally regulated perfectionism. The final subtype is labeled mixed perfectionism (high PSP/high ECP), which includes those who both perceive pressure from others to strive toward perfection and personally adhere to these standards. Consequently, this subtype is considered to be a partially internalized form of perfectionism, in which perceived external contingencies complement personal values and standards.

The development of the 2 × 2 model is especially significant in this area as it offers a number of theoretically driven expectations or hypotheses regarding the comparative consequences of each subtype of perfectionism. The first hypothesis states that based on a comparison of pure personal standards perfectionism and nonperfectionism, the former can be revealed to be either (1a) healthy (better adjustment), (1b) unhealthy (worse adjustment), or (1c) neutral (no difference in terms of adjustment). The second hypothesis states that as pure evaluative concerns perfectionism is externally regulated by contingencies of self-worth it should be the most detrimental subtype (tested via a comparison with nonperfectionism) (Gaudreau & Verner-Filion, 2012). The third hypothesis states that, as a partially internalized subtype of perfectionism, mixed perfectionism should be associated with better adjustment when compared with pure evaluative concerns perfectionism. In accord, the fourth hypothesis states that the partially regulated mixed perfectionism should be associated with poorer adjustment when compared with pure personal standards perfectionism, which is an internally regulated subtype of perfectionism.

A small number of studies have tested the hypotheses of the 2 × 2 model (Gaudreau, 2012; Gaudreau & Verner-Filion, 2012; Gaudreau & Thompson, 2010; Douilliez & Lefevre, 2011). This includes research that has used the broad approach to conceptualizing perfectionism (Douilliez & Lefevre, 2011; Gaudreau & Thompson, 2010). Among these studies, when subtypes are compared in terms of adjustment (academic satisfaction, general positive affect, and perceived goal progress), support has been provided for the hypotheses of the model (1a, 2, 3, and 4). However, when maladjustment has been assessed (general negative affect and depression), evidence is more equivocal. Specifically, this research supports the neutral valence of pure personal standards perfectionism (1c), rather than a healthy valence (1a). In addition, differences between pure evaluative concerns perfectionism and mixed perfectionism are evident for some indicators of maladjustment (general negative affect) but not others (depression) (Hypothesis 3). This latter finding is especially important because a unique feature of the model is that pure evaluative concerns perfectionism is purported to be the most debilitating subtype (Gaudreau & Thompson, 2010). It is therefore possible that the 2 × 2 model successfully predicts differences between subtypes in terms of adjustment, but may not adequately account for differences, or lack of differences, between subtypes in maladjustment. Testing the hypotheses of the 2 × 2 model in relation to athlete burnout offers a means of examining this possibility.

One would expect the subtypes of perfectionism to be differentially related to burnout symptoms. Broadly, this is expected because each subtype is purported to reflect varying degrees of internalization and corresponding propensities for functional outcomes (Deci & Ryan, 2008). In addition, the prominence of personal standards perfectionism and evaluative concerns perfectionism within each subtype alludes to expected differences. Whereas the influence of the achievement standards pursued by athletes are comparatively more neutral, even adaptive, in the burnout process, the self-criticism, doubts, and concerns captured by evaluative concerns perfectionism are thought to predispose athletes to the chronic stress, lack of need fulfillment, and deterioration in motivation that precedes the syndrome (Gould et al., 1996; Hill et al., 2008; Mallinson & Hill, 2011). Consequently, consistent with organization of the two core dimensions within each subtype, one would anticipate differences between subtypes as predicted by the 2 × 2 model. Of special note is that this presumes pure personal standards perfectionism to be healthier than nonperfectionism (Hypothesis 1a) and that personal standards perfectionism attenuates the evaluative concerns perfectionism–burnout relationship (Hypothesis 3).

Although to date no studies have explicitly tested the hypotheses of the 2 × 2 model in relation to burnout, the findings of research using various person-oriented and variable-oriented approaches (e.g., cluster analysis and moderated hierarchical regression) can be considered in light of the model. For example, Chen, Kee, Chen, and Tsai (2008) found that composites analogous to evaluative concerns perfectionism and personal standards perfectionism ("adaptive perfectionism" and "maladaptive perfectionism") interacted to predict total burnout in intercollegiate athletes from various sports. Although

simple slopes were not examined, the findings suggest support for Hypotheses 1a and 4 but not Hypotheses 2 and 3. Specifically, consistent with the 2 × 2 model, mixed perfectionism was associated with higher burnout than pure personal standards perfectionism (Hypothesis 4), and pure personal standards perfectionism was associated with lower burnout than nonperfectionism (Hypothesis 1a). However, no differences were apparent between the equivalent of pure evaluative concerns perfectionism and either mixed perfectionism (Hypothesis 3) or nonperfectionism (Hypotheses 2).

In a more recent study, Gotwals (2011) adopted a person-oriented approach to examine the relationship between perfectionism and burnout in intercollegiate athletes from a range of sports. He found that a group similar to pure personal standards perfectionism ("healthy perfectionists") reported lower levels of all burnout symptoms in comparison with a nonperfectionist group (Hypothesis 1a). In addition, one of the two groups that were similar to mixed perfectionism ("doubt-oriented unhealthy perfectionists") reported higher levels of all athlete burnout symptoms in comparison with the pure personal standards perfectionism group (Hypothesis 4). However, because no group emerged that resembled pure evaluative concerns perfectionism, Hypothesis 2 (pure evaluative concerns perfectionism versus nonperfectionism) and Hypothesis 3 (pure evaluative concerns perfectionism versus mixed perfectionism) cannot be considered. Overall, these two studies suggest that the interactive effects of dimensions of perfectionism may be important when predicting athlete burnout and has provided at least some support for the hypotheses of the 2 × 2 model.

In summary, the purpose of the current study was to examine the interactive effects of perfectionism on symptoms of athlete burnout. In doing so, the hypotheses of the 2 × 2 model of dispositional perfectionism were tested in relation to athlete burnout. The first hypothesis was that pure personal standards perfectionism would be associated with lower burnout symptoms than nonperfectionism (Hypothesis 1a). The second hypothesis was that pure evaluative concerns perfectionism would be associated with the highest level of burnout symptoms (Hypothesis 2). The third hypothesis was that mixed perfectionism would be associated with lower burnout symptoms than pure evaluative concerns perfectionism (Hypothesis 3). The fourth hypothesis was that mixed perfectionism would be associated with higher burnout symptoms than pure personal standards perfectionism (Hypothesis 4).

Method

Participants

One hundred seventy-one junior male soccer players were recruited from the soccer academies and centers of excellence of professional football clubs in England (age M = 16.17, s = 1.57, range 13–19). The primary purpose of soccer academies and centers of excellence are to recruit and develop young footballers. Players are selected at an early age based on their athletic ability and retained based upon their continued progress. Development squads range from those for players under 9 years old to those for players under 21 years old. The season typically lasts seven months of the year (September to March). During this period, academy players receive a minimum amount of regular coaching (3 hr, 5 hr, and 12 hr depending on age group) and take part in a maximum number of competitive games (30 or 36 depending on age group). There is no minimum or maximum amount of coaching or games for players in centers of excellence (see Football Association's Program for Excellence, 2011–12, for more details). The current players had typically been at their club for 4.35 years (s = 3.06), trained and competed for an average of 12.27 hr per week (s = 6.49) and reported on a 9-point Likert scale that their participation in sport was considered very important (M = 8.67, s = 0.64) in comparison with other activities (1 = *not at all important* to 9 = *extremely important*). Players completed a multisection questionnaire. Institutional approval was gained before conducting the project. Parent/guardian consent and athlete consent were gained before athletes took part in the study.

Instruments

Multidimensional Perfectionism. To measure the broad dimensions of evaluative concerns perfectionism (ECP) and personal standards perfectionism (PSP), their subdimensions were assessed using the brief version of Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (H-MPS; Cox et al., 2002) and Dunn et al.'s (Gotwals, Dunn, Causgrove Dunn, & Gamache, 2011) Sport-Multidimensional Perfectionism Scale-2 (S-MPS-2). The brief H-MPS contains three 5-item subscales that assess self-oriented perfectionism (SOP: e.g., "I set very high standards for myself"), socially prescribed perfectionism (SPP: e.g., "My family expects me to be perfect"), and other-oriented perfectionism (OOP: e.g., "I do not expect a lot from my friends" [reversed]). Consistent with current recommendations and practice (e.g., Douilliez & Lefevre, 2011; Gaudreau & Thompson, 2010; Stoeber & Otto, 2006), other-oriented perfectionism was not included in the calculation of PSP. Athletes responded on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The stem of the instrument was adapted to focus athletes on sport when completing the scale as opposed to their general life ("The following items ask you to think about when you are practicing or playing your sport"). Evidence to support the validity and reliability of this instrument has been provided by Cox et al. (2002). This includes assessment of factor structure (confirmatory factor analysis) and internal reliability in both student and clinical samples (SOP, α = .84; SPP, α = .85; and OOP, α = .66). The shortened subscales are strongly related to the original subscales (SOP, r = .95; SPP, r = .94; and OOP, r = .77;

Cox et al., 2002). Evidence to support the use of the scale has also been provided by recent research using athletes from a range of sports (e.g., soccer, volleyball, and ice hockey; Gaudreau & Antl, 2008; Gaudreau & Verner-Filion, 2012).

The S-MPS-2 is a domain-specific adaption of Frost et al.'s (1990) Multidimensional Perfectionism Scale. It contains six subscales that assess personal standards (PS; 7 items, e.g., "I have extremely high goals for myself in my sport"), concern over mistakes (COM; 8 items, e.g., "If I fail in competition, I feel like a failure in person"), doubts about actions (DAA; 6 items, e.g., "Prior to competition, I rarely feel satisfied with my training"), perceived parental pressure (PPP; 9 items, e.g., "My parents expect excellence from me in my sport"), perceived coach pressure (PCP; 6 items, e.g., "My coach sets very high standards for me in competition"); and need for organization (ORG; 6 items, e.g., "I have and follow a pre-competitive routine"). To replicate current research testing the 2 × 2 model using broad dimensions of perfectionism (Douilliez & Lefevre, 2011; Gaudreau & Thompson, 2010), organization was not included in the calculation of PSP. Athletes respond to items on a 5-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Evidence for the validity and reliability of this instrument has been provided by Dunn and colleagues (e.g., Dunn et al., 2006; Gotwals & Dunn, 2009; Gotwals et al., 2011) across a number of studies using regional and intercollegiate athletes (e.g., basketball, ice hockey, and soccer) to assess factorial structure (exploratory factor analysis and multidimensional scaling) and internal consistency (all αs ≥ .77; Gotwals et al., 2011).

Athlete Burnout. Athlete burnout was measured using the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith. 2001). This includes three 5-item subscales that assess reduced sense of athletic accomplishment (RA; e.g., "My football [soccer] is really going downhill"); emotional and physical exhaustion (EE; e.g., "I just feel like I don't have any energy"); and sport devaluation (D; e.g., "I'm just not in to football [soccer] like I used to be"). The subscales can also be combined in create a total burnout score. Items are measured on a 5-point Likert scale (1 = *almost never* to 5 = *almost always*). Evidence for the validity and reliability of this instrument has been provided by Raedeke and Smith (2001) via assessment of factorial structure (confirmatory factor analysis) and internal consistency (all αs ≥ .84) in intercollegiate athletes from a range of sports (e.g., swimmers, soccer, and volleyball).

Analytical Strategy

The analytical strategy adopted was based on recent recommendations on how to test the hypotheses of the 2 × 2 model of dispositional perfectionism (see Gaudreau, 2012; Gaudreau & Thompson, 2010). Hierarchical moderated regression was first performed on each of the burnout symptoms. These were used to establish whether the interaction effects of the two dimensions of perfectionism were statistically significant. In these analyses, centered predictor variables (PSP and ECP) were entered in to Step 1 followed by their interaction term in Step 2. When the interaction term was not statistically significant, a multiple regression was conducted that included only the main effects of PSP and ECP (uncentered). The results were then interpreted using the operational framework provided by Gaudreau (2012). Predicted values of the burnout symptoms were calculated using the linear regression equations provided by Gaudreau (2012).[2]

When the interaction term was statistically significant, two sets of simple slopes were calculated to enable comparison of the predicted values for each subtype of perfectionism (see Aiken & West, 1991). The first set of simple slopes estimated the relationship between PSP and burnout at low (–1 *SD*) and high (+1 *SD*) levels of ECP. The first simple slope was used to compare the predicted values of nonperfectionism (low PSP/low ECP) with pure personal standards perfectionism (high PSP/low ECP) (Hypothesis 1). The second slope in this set was used to compare the predicted values of pure evaluative concerns perfectionism (low PSP/high ECP) and mixed perfectionism (high PSP/high ECP) (Hypothesis 3). The second set of simple slopes estimated the relationship between ECP and burnout at low (–1 *SD*) and high (+1 *SD*) levels of PSP. The first simple slope of this set was used to compare the predicted values of nonperfectionism (low PSP/low ECP) with pure evaluative concerns perfectionism (low PSP/high ECP) (Hypothesis 2). The second slope of this set was used to compare the predicted values of pure personal standards perfectionism (high PSP/low ECP) and mixed perfectionism (high PSP/high ECP) (Hypothesis 4). Predicted values of the burnout symptoms were then calculated using the linear regression equations provided by Cohen, Cohen, West, and Aiken (2003, p. 269).

Results

Preliminary Analysis

Before the main analyses, missing value analysis was conducted on the data. Due to large amounts of missing data (> 5%), two participants were removed from the sample. There were 155 complete cases and 14 cases with incomplete data. For those with incomplete data, the average number of missing values was the equivalent of fewer than two items (M = 1.57, SD = 0.65, range 1–3). An inspection of the pattern of missing data suggested a nonsystematic mechanism for the missing data. Specifically, no participants shared the same missing value. Consequently, each missing item was replaced using the mean of each case's available nonmissing items from the relevant subscale (Graham, Cumsille, & Elek-Fisk, 2003). Following this procedure, the data were then screened for univariate outliers (standardized z-scores larger than 3.29, $p < .001$, two-tailed) using the protocol described by Tabachnick and Fidell (2007). This led to the removal of two participants (n = 167). Finally, assessment of the internal consistency of the instruments

(Cronbach's alpha) supported their reliability (ECP α = .89, PSP α =.71, total burnout α = .85, RA α = .61, EE α = .75, D α = .78).

Descriptive Statistics and Bivariate Correlation Coefficients

Evaluative concerns perfectionism (ECP M = 12.53, SD = 2.39) and personal standards perfectionism (PSP M = 9.73, SD = 0.88) were positively correlated (r = .27, p < .05). The sample reported low-to-moderate levels of total burnout and its symptoms (total burnout M = 2.16, SD = 0.55; RA M = 2.28, SD = 0.60; EE M = 2.45, SD = 0.69; D M = 1.74, SD = 0.70). Evaluative concerns perfectionism was positively associated with total burnout (r = .29, p < .05) and all burnout symptoms (RA r = .22, EE r = .27, D r = .23, p < .05). Personal standards perfectionism was negatively associated with total burnout (r = –.23, p < .05) and two burnout symptoms (RA r = –.33, D r = –.22, p < .05) but unrelated to the other (EE r = –.03, p > .05). Total burnout and symptoms of burnout were all positively correlated with each other (total burnout-RA r = .80, total burnout-EE r = .79, total burnout-D r = .87, RA-EE r = .41, RA-D r = .61, EE-D r = .52, ps < .05).

Moderated Hierarchical Regressions

Moderated hierarchical regression indicated that the interaction between the two dimensions of perfectionism was not statistically significant when predicting total burnout (B = –.03, β = –.10, t = –1.37, p > .05), reduced sense of accomplishment (B = –.04, β = –.12, t = –1.68, p > .05), and emotional and physical exhaustion (B = .01, β = .03, t = 0.37, p > .05). However, the interaction was statistically significant when predicting sport devaluation (B = –.05, β = –.15, t = –2.11, p < .05). Consequently, in the case of total burnout, reduced sense of accomplishment and emotional and physical exhaustion, three multiple regressions were conducted to estimate the main effects of PSP and ECP (uncentered and in the absence of the interaction term). To test the hypotheses of the 2 × 2 dispositional model, these main effects were then interpreted using the framework provided by Gaudreau (2012). In the case of sport devaluation, the hypotheses were tested by using simple slopes analysis (Aiken & West, 1991). These were used as planned contrasts between the four subtypes of perfectionism. It should be noted that the findings of all analyses remain the same if age is included as a covariate.

The first main effects only model was statistically significant, F (2, 164) = 19.20, p < .01, and explained 19.0% of variance in total burnout. Personal standards perfectionism was a negative predictor (B = –.21, β = –.34, t = –4.59, p < .01) and ECP was a positive predictor (B = .09, β = .38, t = 5.26, p < .01) of total burnout. Based on the operational framework provided by Gaudreau (2012), this pattern of main effects provides support for all hypotheses of the 2 × 2 model (1a, 2, 3, and 4). The predicted values for total burnout across low (–1 SD) and high (+1 SD) levels of PSP and ECP are displayed in Figure 1.

The second main effects only model was statistically significant, F (2, 164) = 22.29, p < .01, and explained 21.4% of variance in a reduced sense of accomplishment. Personal standards perfectionism was a negative predictor (B = –.29, β = –.42, t = –5.86, p < .01) and ECP was a positive predictor (B = .09, β = .34, t = 4.67, p < .01) of a reduced sense of accomplishment. Based on the operational framework provided by Gaudreau (2012), this pattern of main effects provides support for all hypotheses of the 2 × 2 model (1a, 2, 3, and 4). The predicted values for reduced sense of accomplishment across low (–1 SD) and high (+1 SD) levels of PSP and ECP are displayed in Figure 2.

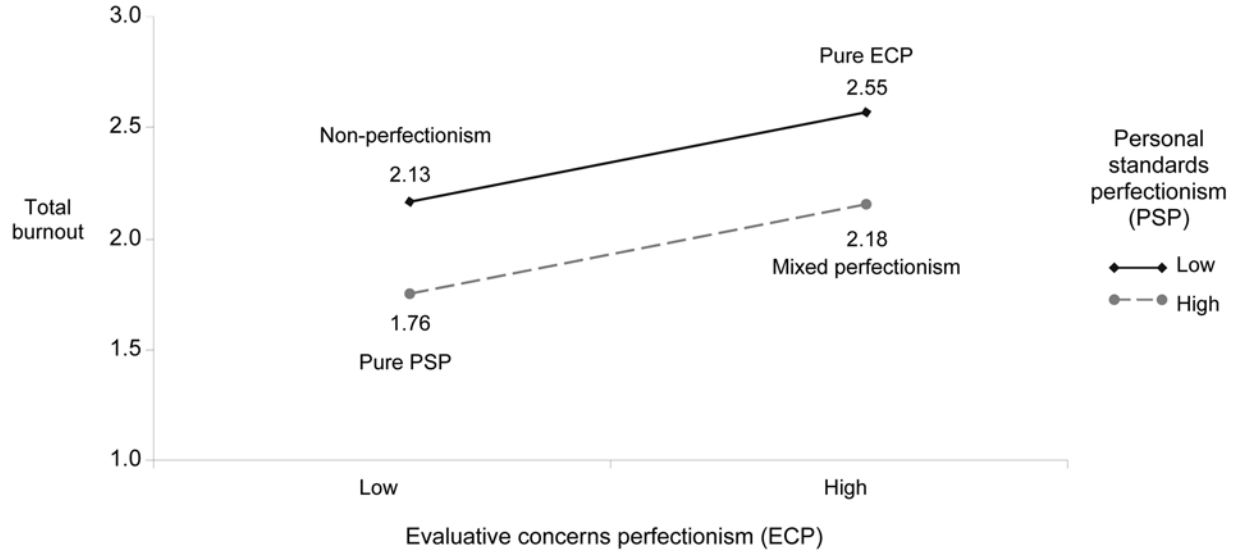

Figure 1 — Predicted values of *total burnout* across the four subtypes of perfectionism.

The third main effects only model was also statistically significant, $F(2, 164) = 7.43$, $p < .01$, and explained 8.3% of variance in physical and emotional exhaustion. Personal standards perfectionism was not a significant predictor of physical and emotional exhaustion (B = –.09, β = –.11, $t = -1.44$, $p > .05$), but ECP was a significant positive predictor (B = .09, β = .30, $t = 3.83$, $p < .01$). Based on the operational framework provided by Gaudreau (2012), this pattern of main effects provides support for Hypotheses 1c, 2, and 4 but not for Hypothesis 3 of the 2 × 2 model. The predicted values for physical and emotional exhaustion across low (–1 *SD*) and high (+1 *SD*) levels of PSP and ECP are displayed in Figure 3.

The only interaction effect model was statistically significant, $F(3, 163) = 10.78$, $p < .01$, and explained 16.6% of variance in sport devaluation. The simple slope of PSP at low levels of ECP was not significant (B = –.12, β = –.15, $p > .05$), indicating that there were no differences between pure PSP and nonperfectionism in terms of sport devaluation (Hypothesis 1c). The simple slope of PSP at high levels of ECP was significant (B = –.38, β = –.47, $p < .01$), indicating that pure ECP was associated with higher sport devaluation than mixed perfectionism (Hypothesis 3). The simple slope of ECP at low levels of PSP was significant (B = .14, β = .49, $p < .01$), indicating that pure ECP was associated with higher levels

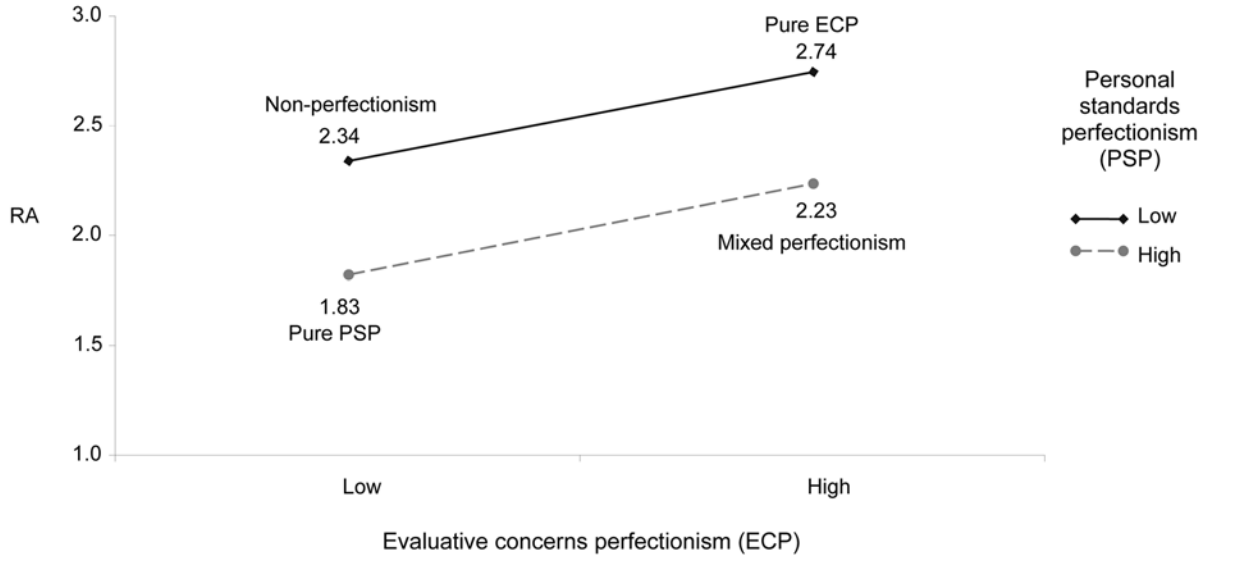

Figure 2 — Predicted values of reduced sense of athletic accomplishment (RA) across the four subtypes of perfectionism.

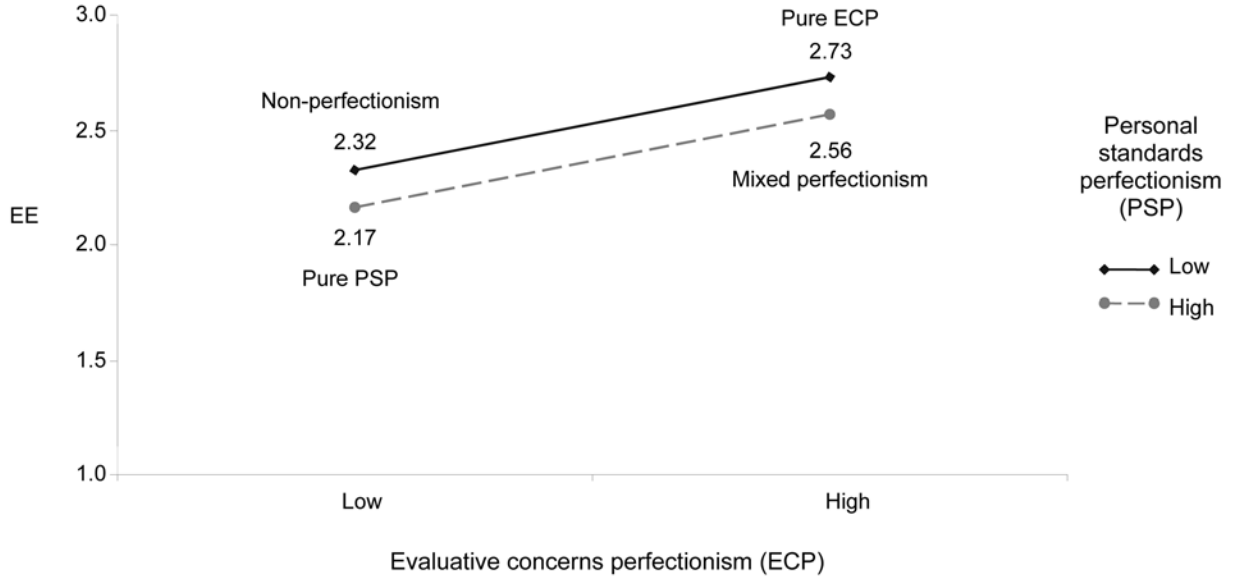

Figure 3 — Predicted values of *emotional and physical exhaustion* (EE) across the four subtypes of perfectionism.

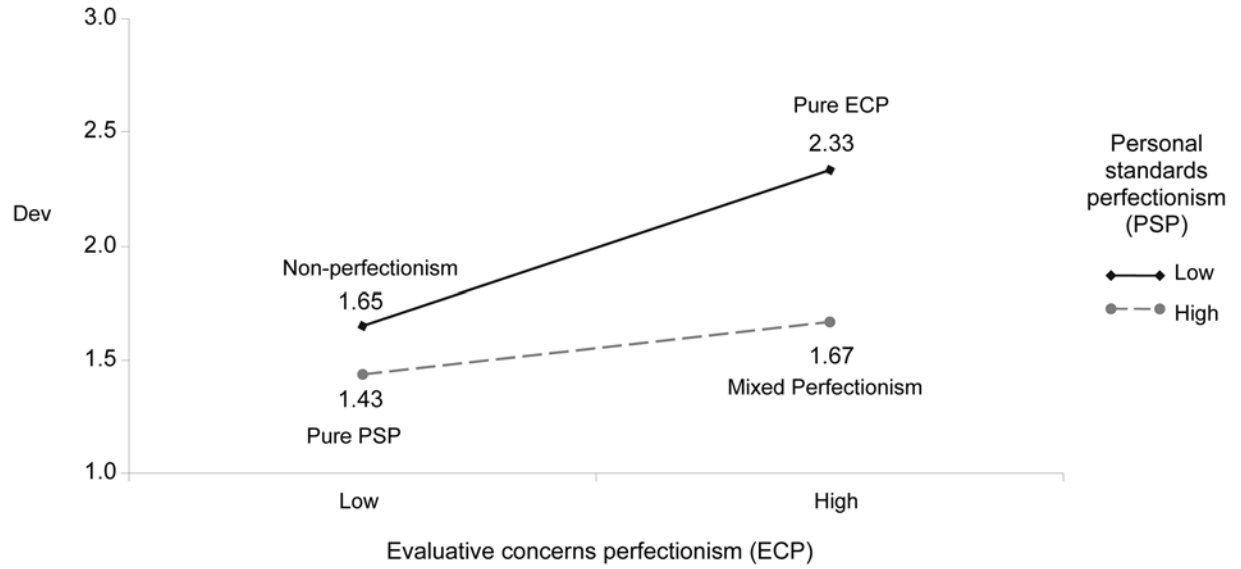

Figure 4 — Predicted values of *sport devaluation* (D) across the four subtypes of perfectionism.

of sport devaluation than nonperfectionism (Hypothesis 2). The simple slope of ECP at high levels of PSP was not significant (B = .05, β = .17, $p > .05$), indicating that there was no difference between mixed perfectionism and pure PSP examined (Hypothesis 4). Overall, this pattern of effects provides support for Hypotheses 1c, 2, and 3 but not Hypothesis 4 of the 2 × 2 model. The predicted values for devaluation across low (–1 *SD*) and high (+1 *SD*) levels of PSP and ECP are displayed in Figure 4.

Discussion

The purpose of the current study was to examine the interactive effects of dimensions of perfectionism on symptoms of athlete burnout and test the hypotheses of the 2 × 2 model of dispositional perfectionism (Hypotheses 1a, 2, 3, and 4). The findings provided some support for Hypothesis 1a, in that pure personal standards perfectionism was associated with lower levels of total burnout and reduced sense of accomplishment in comparison with nonperfectionism. However, these two subtypes were also associated with similar levels of emotional and physical exhaustion and sport devaluation (Hypothesis 1c). The second hypothesis was fully supported, with pure evaluative concerns perfectionism associated with higher levels of total burnout and all burnout symptoms in comparison with nonperfectionism. The third hypothesis received partial support, with mixed perfectionism associated with lower levels of total burnout, reduced sense of accomplishment, and sport devaluation but similar levels of emotional and physical exhaustion in comparison with pure evaluative concerns perfectionism. Similarly, the fourth hypothesis received partial support, with mixed perfectionism associated with higher levels of total burnout, reduced sense of accomplishment, and emotional and physical exhaustion but similar levels of sport devaluation in comparison with pure personal standards perfectionism.

Subtypes of Perfectionism and Athlete Burnout

The effects of pure personal standards perfectionism for athletes are currently subject to debate (Flett & Hewitt, 2006; Stoeber, 2011). Here, the healthy valence of this subtype was evident in the lower levels of total burnout and reduced accomplishment in comparison with nonperfectionism. This is the first time differences between these subtypes have emerged in maladjustment when using broad dimensions of perfectionism (Douilliez & Lefevre, 2011; Gaudreau & Thompson, 2010). Within the current theoretical framework, this is explained by the general propensity for this subtype to contribute to functional outcomes and the positive influence of achievement striving uninhibited by evaluative concerns. With this in mind, existing research has identified a number of more specific sources of potential comparative benefits. These include intrinsic forms of motivational regulation, problem-focused coping, and perceptions of competence (Dunkley, Blankstein, Zuroff, Lecce, & Hui, 2006; Gaudreau & Antl, 2008; Hill et al., 2010), all of which are likely to be important in terms of offsetting symptoms of burnout.

Comparative benefits were not evident for exhaustion and devaluation, as the two subtypes were associated with similar levels. In the case of these symptoms, then, alongside low evaluative concerns perfectionism, high levels of personal standards perfectionism confers no additional benefits or costs for athletes in comparison with when it is evident at low levels. This finding is consistent with research in this area that has found no distinction between the two subtypes in terms of maladjustment (e.g., Douilliez

& Lefevre, 2011; Gaudreau & Thompson, 2010) and supports the neutral, as opposed to healthy, valence of pure personal standards perfectionism (Hypothesis 1c). It is possible that for these symptoms less desirable features associated with pure personal standards perfectionism and its subdimensions counterbalance its more adaptive features (e.g., extrinsic regulation and compulsive tendencies). Ultimately, these particular findings serve to highlight the importance of considering each burnout symptom individually and the potential limits of the comparative protection offered by pure personal standards perfectionism in relation to burnout.

As hypothesized, pure evaluative concerns perfectionism was associated with higher levels of total burnout and all burnout symptoms than nonperfectionism. The deleterious effects of evaluative concerns perfectionism and its subdimensions for athletes are well documented. This includes some of the proposed antecedents of burnout, as well all three symptoms of burnout (Gaudreau & Antl, 2008; Hill et al., 2010; Mallinson & Hill, 2012). The current study extends this research by confirming that its adverse impact is apparent in the presence of low levels of personal standards perfectionism. It also corroborates evidence of the comparative costs of pure evaluative concerns perfectionism in terms of maladjustment (Douilliez & Lefevre, 2011; Gaudreau & Thompson, 2010) and provides support for the notion that this subtype is the most detrimental in the 2 × 2 model.

The debilitating nature of pure evaluative concerns perfectionism was further demonstrated by the result of its comparison with mixed perfectionism. Pure evaluative concerns perfectionism was associated with higher levels of total burnout, reduced sense of accomplishment, and sport devaluation in comparison with mixed perfectionism. The current study therefore offers additional support for the theoretical perspective of the 2 × 2 model. Specifically, the presence of internalized forms of perfectionism (viz., personal standards perfectionism) may have the potential to ameliorate the influence of externally regulated perfectionism (viz., evaluative concerns perfectionism) and provide the basis for comparatively lower maladjustment (Gaudreau & Verner-Filion, 2012). It is noteworthy, however, that the protective effects did not extend to emotional and physical exhaustion. Consequently, as found previously, differences between these subtypes may not always be evident in terms of maladjustment (Douilliez & Lefevre, 2011; Gaudreau & Thompson, 2010). Here, the exhaustive toll of high evaluative concerns perfectionism was similar for athletes exhibiting either subtype.

The differences between pure evaluative concerns perfectionism and mixed perfectionism also provide support for another major tenet of the 2 × 2 model. Specifically, it is the former and not the latter that is the most debilitating subtype of perfectionism. Some researchers have expressed reservations over the inclusion of this subtype because it may not entail personal striving for perfection (see Stoeber, 2011). In support of continuing to examine this subtype, it is noteworthy that others have previously argued that while overwhelming feelings of helplessness may inhibit striving, these individuals demonstrate a psychological commitment to perfection through the value they attach to its attainment (Dunkley et al., 2006). Within a model that includes both intrapersonal and interpersonal features of perfectionism, failing to consider this subtype may also lead to an underappreciation of its interpersonal origins and consequences (see Hewitt, Flett, Besser, & McGee, 2003). Consequently, if differences continue to emerge between this subtype and others subtypes, it would appear to be a useful addition to our understanding of multidimensional perfectionism.

The desirability of mixed perfectionism should be considered in light of its comparison with pure personal standards perfectionism. This comparison is also noteworthy as a number of researchers (including the current author) will consider mixed perfectionism to be the only subtype to fully capture perfectionism as traditionally described (viz., a combination of both striving and evaluative components). Mixed perfectionism was associated with higher levels of total burnout and two symptoms of burnout when compared with pure personal standards perfectionism. In support of the 2 × 2 model, this attests to the costs of a partially internalized subtype of perfectionism relative to an internally regulated subtype of perfectionism observed elsewhere (Douilliez & Lefevre, 2011; Gaudreau & Thompson, 2010). It also affirms current understanding of the perfectionism-burnout relationship. Specifically, it appears that it is not the standards the athlete holds that give rise to burnout (no matter how lofty); it is the nature of the evaluative process that accompanies those standards that renders athletes vulnerable to burnout (Lemyre, Hall, & Roberts, 2008).

There was no difference between these two subtypes in terms of sport devaluation. This may be a further example of how the presence of personal standards perfectionism can moderate the maladjustment associated with evaluative concerns perfectionism. Alternatively, it is possible that although regulated differently (partially internal versus internal), the two subtypes are characterized by similar levels of commitment to sport (i.e., low devaluation). One might speculate that given the pervasive influence of evaluative concerns perfectionism, it is unlikely that this symptom of burnout will remain subdued over time. Although research has begun to do so (e.g., Chen, Kee, & Tsai, 2009), examining the perfectionism-athlete burnout relationship longitudinally remains a priority for researchers in this area. These are the most appropriate designs for capturing the psychological processes that underpin the development of burnout and offer a means of capturing the influence of perfectionism on junior athletes as they experience inevitable frustration in the pursuit of elite status.

Limitations and Other Future Directions

There are a number of limitations that require consideration, some of which stem from the 2 × 2 dispositional

model of perfectionism. Caution is required in terms of generalizing the findings to other measures of perfectionism. There are a number of measures of perfectionism that include subdimensions which capture a wide range of features. Differences in the findings of studies testing the 2 × 2 model have already begun to arise when alternative models (e.g., broad conceptualization versus H-MPS) are examined (e.g., Gaudreau & Thompson, 2010, versus Gaudreau and Verner-Filion, 2012). Researchers in this area should therefore be wary of the potential for differences across studies when acting on Gaudreau and Verner-Filion's (2012) call to investigate the applicability of the 2 × 2 model using alternative available measures.

A cross-sectional design was also adopted in the current study. This is potentially important because there is evidence that some dimensions of perfectionism may be vulnerability factors that exert their effects via an interaction with contextual features, such as achievement difficulties (Flett & Hewitt, 2006). It is possible, for example, that when self-oriented perfectionism is used as the sole indicator of pure personal standards perfectionism, as in Gaudreau and Verner-Filion (2012), circumstances may arise where this subtype is unhealthy. Whether differences between mixed perfectionism and pure evaluative concerns perfectionism persist under these conditions is also unclear. Arguably, the theoretical explanations provided by the 2 × 2 model currently do not fully capture the complexities of these dimensions. Research that tests the hypotheses of the 2 × 2 model under these conditions would therefore make a valuable addition to research in this area, as well as provide further insight into the effects of the different combinations of dimensions of perfectionism.

The ability to detect interactions is notoriously difficult, with variance explained by interaction terms estimated to usually be 1–3% (McClelland & Judd, 1993). Here, the observed interaction effects were typical (0 to 2%), with most nonsignificant effects being negligible in size. Fortunately, the hypotheses of the 2 × 2 model can be tested in the absence of significant interactions (see Gaudreau, 2012). However, for certain patterns of findings to emerge, interaction terms are required. Therefore, likely effect sizes are still a consideration for the design of future research and entails more than adequate sample size (see McClelland & Judd, 1993). It is also noteworthy that establishing subtypes is dependent on variability in measures of perfectionism (+1/–1 *SD*). This may pose interpretational difficulties when comparing subtypes across studies and again necessitates consideration of generalizability. However, given the benefits of this approach in comparison with more exploratory techniques (e.g., cluster analysis), this variable-oriented approach is a valuable means of examining the interactive effects of perfectionism.

Finally, the generalizability of the findings is also worthy of consideration in terms of the characteristics of the sample. The generalizability of the findings is restricted to groups similar to the current sample (i.e., male junior football players in England). This is noteworthy because research has begun to emerge that suggests perfectionism and its effects may differ depending on various demographic facotrs, such as gender (Dunn, Gotwals, & Causgrove Dunn, 2005) and culture (Gilman, Ashby, Sverko, Florell, & Varjas, 2005). In assessing the impact of these factors, the 2 × 2 model holds some interesting possibilities for three-way interactions in examining the perfectionism-burnout relationship further. For now, they should be taken into account when considering the applicability of the findings in other populations.

Conclusion

The 2 × 2 model is a recent development in this area and has already led to healthy debate (Stoeber, 2012). One of its main strengths is that it offers formalized hypotheses regarding the interactive effects of perfectionism dimensions that can be tested. The current study provided some support for the 2 × 2 model in that four subtypes identified in the model can be distinguished based on their relationship with some, but not all, symptoms of burnout. Of special note, pure personal perfectionism provided some, albeit limited, protection from burnout in comparison with nonperfectionism. In addition, pure evaluative concerns perfectionism, as opposed to mixed perfectionism, emerged as the most debilitating in terms of burnout symptoms. Overall, the findings suggest that the 2 × 2 model offers a useful framework in which to examine perfectionism-burnout relationships among athletes.

Notes

1. The two broad dimensions have been labeled in a number of ways by researchers in this area (e.g., perfectionistic striving and perfectionistic concerns; Stoeber & Otto, 2006). The terminology adopted here is consistent with the 2 × 2 model of dispositional perfectionism.

2. Equations provided by Gaudreau (2012) are as follows.

   (1) $\hat{Y}$ of Nonperfectionism = Intercept + (B_{PSP} × low PSP) + (B_{ECP} × low ECP)

   (2) $\hat{Y}$ of Pure PSP = Intercept + (B_{PSP} × high PSP) + (B_{ECP} × low ECP)

   (3) $\hat{Y}$ of Pure ECP = Intercept + (B_{PSP} × low PSP) + (B_{ECP} × high ECP)

   (4) $\hat{Y}$ of Mixed Perfectionism = Intercept + (B_{PSP} × high PSP) + (B_{ECP} × high ECP)

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